

ON SHEARLETS ON $L^2(Q_p^2)$

A. ASKARI HEMMAT * AND M. FATEMIDOKHT

ABSTRACT. p -adic numbers were introduced in 1897 by the German mathematician K. Hensel. The field Q_p of p -adic numbers is defined as the completion of the field of the rational numbers Q with respect to the non-Archimedean p -adic norm $|\cdot|_p$. In this talk, we introduce the continuous shearlet system on $L^2(Q_p^2)$ and we obtain its inversion formula. Also we introduce discrete p -adic shearlet frame. In the definition of the shearlet system we use the parabolic scaling matrices A_a in Q_p , which is different from its definition in \mathbb{R} . Also we define the classical shearlets, a class of particular importance shearlets.

Keywords: p -adic numbers, Fourier transform, continuous p -adic shearlet transform, p -adic shearlet system.

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E-mail address: askari@uk.ac.ir

*Speaker.